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Soviets Push Telemetry Bypass

By Clarence A. Robinson, Jr.

Washington—Capability to tape record telemetry data onboard ballistic missiles and parachute the tapes to earth is being developed by the Soviet Union. It may already have been tested on an intercontinental missile. Such a system could make verification of a Strategic Arms Limitation Treaty impossible.

The new wrinkle in Soviet efforts to avoid U. S. interception of telemetry data during ICBM tests comes at a time when the U. S. already has agreed to permit Soviet encryption of some telemetry data. It also comes as a national debate is heating up over the second strategic arms agreement now in the negotiating home stretch, according to Administration officials.

The officials explained that the USSR has developed a system they describe as "a tape bucket." After staging during the test of an ICBM, a capsule is jettisoned with the telemetry data for that portion of the flight. A parachute deploys on the capsule, and it homes on a beacon. Reentry vehicles carry telemetry information on the final phase of the test and are recovered after parachute landing in the target area.

Soviet ICBMs are launched from Tyuratam and guided to the target area on the Kamchatka Peninsula.

Verification of the SALT 2 agreement is a major issue surfacing among Senate members, and assurance of U. S. ability to monitor Soviet compliance with the treaty is central to achieving ratification in the Senate.

"The USSR has been working on the tape bucket recovery system ever since it discovered how dependent the U. S. is on interception of telemetry data," a U. S. strategic weapons expert said. "This adds

insult to injury, because the U. S. SALT 2 negotiations have already agreed to permit the Soviet Union to transmit telemetry data encrypted on channels not specifically related to the contents of the agreement. As an example, accuracy of ICBMs is not related to the verification issue and the Russian negotiators have cited this as data they should be permitted to encrypt before transmission."

Both the first strategic arms agreement and the second treaty as it has been negotiated prohibit interference with either side's means of verification. But serious questions have been raised by the U. S. on two occasions over transmission of ICBM test data when it was determined the information had been encrypted.

The most recent occurrence was during a test with the heaviest Soviet ICBM—the SS-18, the ballistic missile that poses the most serious threat to the U. S. Boeing Minuteman ICBM force. That test took place in December, 1978, as Secretary of State Cyrus Vance was meeting on SALT

2 with Soviet Foreign Minister Andrei Gromyko.

The U. S. position ever since the earliest days of SALT 1 has been that no encryption of telemetry data could be permitted. Encrypted transmission during tests under SALT 1 by the USSR was an issue raised within the Standing Consultative Commission (SCC) by the U. S. The commission was established under the strategic arms agreement to take up issues related to agreement compliance.

After the encryption issue was raised by the U. S. the USSR ceased encryption of telemetry data until the most recent tests.

The U. S. position has been that neither side is permitted to take more rigorous action to conceal strategic arms development and deployment activities than at the time SALT 1 was signed.

"Because the Soviets have raised the issue that they will be permitted to encrypt all telemetry data not specifically related to verification," an Administration official said, "the U. S. position is to assume that encrypted channels will not preclude the U. S. from verifying compliance."

The real nub of the problem, an official explained, is that there are approximately 50 channels of telemetry data transmitted and recorded during an ICBM test. "The Soviets have been using a one-time code for telemetry encryption, which makes it all but impossible to decipher," he said. "If we permit encrypted transmission on some channels, how can we be certain that some of that data are not related to verification? Suppose, for example, that we lose the fuel flow data because of encryption. Then range calculation, throw weight and launch weight of the missile will be hard to determine."

The official added that the U. S. has a secret method for determining the ballistic missile's accuracy without the telemetry data, so that is not a major concern.

"The real question, however, is not whether we can determine accuracy via another method," he said, "but rather [that] it raises serious questions over Soviet motives when it comes to taking advantage of every possible loophole in the agreement. This tape recovery system being perfected is a good example." It is not specifically precluded as the agreement is now structured.

In recent weeks, the Carter Administration has been banking on the use of the Air Force/Lockheed U-2 high-altitude reconnaissance aircraft with new antenna arrays to intercept telemetry data from Soviet ICBM tests. The aircraft would be used as an interim replacement for the electronic intelligence facilities lost in northern Iran (Avast Apr. 9, p. 13).

The U. S. has planned to operate the

U-2s from bases in Pakistan to fly along the Soviet Union's southwestern border with Turkey and Pakistan to record USSR ICBM test data. The capability of the U-2s to gather electronic data "is minimal as far as antenna decibel gains [sensitivity] as compared to ground-based monitoring systems, and the U.S. would have to know well in advance that a test is planned," one U.S. official said.

However, the U.S. decision to cut off economic and military aid to Pakistan because of the Pakistani effort to obtain a gas centrifuge plant for enriching uranium for nuclear weapons application may dash plans to base U-2s there and to fly them over the border area.

In the past two weeks the likelihood that the U.S. and USSR would reach accord on SALT 2 has increased as meetings between Vance and Soviet Ambassador Anatoliy F. Dobrynin have taken place here. The Administration also has increased its effort to sell the second strategic arms treaty to the American public with major public speeches by National Security Advisor Zbigniew Brzezinski and Defense Secretary Harold Brown.

The U.S. International Communications Agency, an organ of the State Dept., has been passing out to North Atlantic Treaty Organization countries a publication entitled "Documents on SALT." The brochure contains articles favoring SALT 2 by Jan. M. Lodal, former National Security Council analyst; Stanley R. Resor, under secretary of Defense for policy, and Herbert Scoville, Jr., former deputy CIA director, and former assistant Arms Control and Disarmament Agency director.

In a letter accompanying the brochure, the agency said: "The media of our two countries have carried a great deal of information in the course of these negotiations. Recently we have come across three items which provide useful insights and background."

The Soviets remain adamant that Communist Party Chief Leonid Brezhnev will not journey to Washington for signing of the SALT 2 treaty. The U.S. has proposed that the site for the treaty signing be Vienna.

The Soviets rejected that location and the U.S. then countered that it be in Geneva, and that is now being considered as the most likely mutually agreeable location, according to Administration officials.

In an effort to overcome sentiment in Congress against the SALT 2 agreement as now negotiated, the Administration has accelerated its efforts to reach an understanding with the Soviet Union on a ban of space testing of antisatellite devices. There is even some Administration optimism

that such an agreement might be reached in time to coincide with the SALT 2 treaty. It would enhance the chances of SALT treaty ratification in the Senate.

The Soviets have carried out 16 tests in space with their killer satellite system, the most recent in May, 1978 (AW&ST Oct. 30, 1978, p. 17), which was considered a success.

"The crux of the whole argument over whether SALT 2 is a good agreement and thus should be ratified," according to a senator whose vote the Administration is counting on, "is not only the assurance of verifying compliance, but more importantly, whether it will guarantee parity and preclude the Soviets from brandishing nuclear weapons. In world politics, it doesn't do any good to be capable of verifying a treaty if it is an inadequate agreement. The average American finds SALT agreements too technical to render a judgment. But one thing is clear to me: That even with SALT 2, we will not be

able to stop the vulnerability of the land-based ICBMs in the U.S., and we will not halt the Soviet deployment of over 6,000 nuclear-armed reentry vehicles on their ICBMs."

The President's position, according to a Senate staff member, is that the agreement is adequately verifiable as opposed to totally verifiable, and that any major violations that could place the U.S. in jeopardy could be detected before fully completed. Violations less than that in scope would be insignificant, in this view.

Air Force Chief of Staff Gen. Lew Allen, Jr., in a speech last month in Los Angeles, said:

"It is clear, however, that even within the prospective terms of SALT 2, the Soviets would be able to continue the majority of their diverse programs to modernize their strategic forces. Continuing large-scale deployments of the latest generation Soviet ICBMs, SLBMs and bombers, projected improvements in their strategic defense and the almost certain addition of new generations of these systems are placing increasingly serious stresses on our deterrent capabilities.

"Consequently, with or without a SALT 2 treaty, we will be obliged to modernize our strategic forces in order to preserve deterrence and essential equivalence. Should we fail to maintain strategic nuclear parity, the Soviets would certainly capitalize on what they see as an historic situation, strategic superiority, and act even more aggressively and coercively around the world."

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Administration's Verification Claims Hit

Washington—U. S. monitoring of Soviet strategic missile testing has met recent setbacks so severe that Carter Administration claims of Strategic Arms Limitation Talks 2 verification amount to "fraud," a former Defense Intelligence chief said last week.

"I predict that U. S. intelligence officials will say SALT is subject to adequate verification, but the definition of verification has been changed in a way reminiscent of George Orwell's 'newspeak' in the book, '1984.'" Lt. Gen. (ret.) Daniel Graham, former director of the Defense Intelligence Agency, said.

Loss of intelligence-gathering apparatus also has jeopardized the verification of SALT 1, he told a meeting of the Coalition for Peace through Strength. The compromise last year of the KH-11 reconnaissance satellite (AWST Nov. 27, 1978, p. 21) opened a serious strategic intelligence gap, he said.

"The Soviets never knew until they got the manual [on the satellite] that the KH-11 took pictures," Gen. Graham said. "If I'd still been in intelligence, the Soviet lack of knowledge about the KH-11 would have led me to say 'yes' about the U. S. having a good shot at verification."

More critical, he said, was the loss early this year of monitoring stations in Iran, which provided a 24-hr. watch on Soviet testing of intercontinental ballistic missiles and antiballistic missiles. "That's critical," Gen. Graham added, "because it represents a tipoff capability to notify other satellites to keep watch or get aircraft out of Alaska to watch the end of the test trajectory."

He said basing monitoring stations in Turkey would be virtually useless because of topographical interference of the Cauca-

sus Mountains. "Sending airplanes [U-2s] would be a fraud because they're not up for 24 hr. and they can't carry the tons of equipment we had in Iran," he added.

Of a third verification vehicle to replace the capability in Iran, Gen. Graham said, "Even if we knew precisely what we want the engineers to do, there's no way satellites could provide the evidence we need until the end of the treaty period."

Extending the Soviet Backfire bomber to unrefueled intercontinental range was addressed by Thomas C. Reed, former secretary of the Air Force.

"The Backfire can recover in Cuba after hitting any U. S. target," he said. "At the rate of Backfire production, which is 30 per year, and the retirement rate of our [Boeing] B-52s, by 1982 the Soviets will have surpassed us in the last strategic measurement—the number of manned bombers."

Gen. Lyman Lemnitzer, former chairman of the Joint Chiefs of Staff, said our North Atlantic Treaty Organization allies fear that SALT 2 will weaken the U. S. position as NATO's strategic nuclear leader. "They are worried about weakened deterrence and our weakened stance in the MBFR [mutual balance of forces reduction] talks, which are stalled in Vienna," Gen. Lemnitzer said.

"Part of their concern is over the 300 SS-18 heavy ICBMs the Soviets have, while the U. S. doesn't have any," he added. "They are puzzled by the protocol provisions in which the U. S. agrees not to provide its NATO allies with cruise missile information for three years, and not allowing ground-launched cruise missiles with a range over 600 km."